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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/991,231	11/15/2001	Xianguo Cao	29250-000565	3944

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HARNESS, DICKEY & PIERCE, P.L.C.
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EXAMINER

NGUYEN, HAI L

ART UNIT	PAPER NUMBER
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2816

DATE MAILED: 04/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/991,231

Applicant(s)

CAO ET AL.

Examiner

Hai L. Nguyen

Art Unit

2816

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 06 February 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 06 February 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The amendment received on 02/06/03 has been reviewed and considered with the following results:

As to the objection to the specification, Applicant's amendments have overcome the objection, as such; the objection has been withdrawn.

As to the objections to the drawings, Applicant's clarification and a revision of the drawings have overcome the objection, as such; the objections to the drawings have been withdrawn.

As to the objection to the claims, Applicant's amendments have overcome the objection, as such; the objection has been withdrawn.

As to the rejection to claims 1-7, under 35 U.S.C. 112, 2nd paragraph, Applicant's arguments with respect to the rejections by the previous office action mailed on 10/07/029 have been fully considered but are not deemed to be persuasive. Therefore, the rejection is still maintained as set forth below.

As to the prior art rejections to claims 1-2, Applicant's arguments with respect to the prior art rejections mailed on 10/07/02 have been fully considered and found persuasive, as such; the prior art rejections have been withdrawn. A new action on the merits appears below.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 2816

3. Claims 1-6 and 11-12 are rejected, under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: the three-bit counter (51 in instant Fig.5), the decoder (52), sampling modules (53, 54), and synchronizers (56). In order for an encoder (57) to generate an output value based on a number of sampling modules (55s) that lock into the second pulse signal which is related with a first pulse as input of a tapped delay circuit and a clock signal for clocking the output signals from sampling modules (specification p.10, line 6 through p.11), those omitted elements need to be included in the claims.

4. Claim 7 is rejected, under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: the three-bit counter (51 in instant Fig.5), the decoder (52), and sampling modules (53, 54). In order for an encoder (57) to generate an output value based on a number of sampling modules (55s) that lock into the second pulse signal which is related with a first pulse as input of a tapped delay circuit and a clock signal for clocking the output signals from sampling modules (specification p.10, line 6 through p.11), those omitted elements need to be included in the claims.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an

Art Unit: 2816

international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1 and 2 are rejected under 35 U.S.C. 102(e) as being anticipated by Lee et al. (US 6,326,826).

With regard to claim 1, Lee et al. discloses in Figs.1-2 an apparatus comprising a tapped delay circuit (11) including a plurality of tapped delay cells (18's), the tapped delay circuit receiving a first pulse signal (output signal of 21) as input; a plurality of sampling modules (22's), each sampling module receiving a second pulse signal as input (at "reset1" terminals) while the first pulse signal propagates through the tapped delay circuit, and each sampling module being clocked by a tapped output signal (CK[1]-CK[7]) from one of the plurality of tapped delay cells; and an encoder (24, 25) for generating an output value based on a number of sampling modules that lock into the second pulse signal.

With regard to claim 2, the output value inherently represents the process, voltage, and temperature conditions of a microchip. Since it is notoriously well known in the art that the delay locked loop circuits automatically compensate for variations in delay caused by the process, changing temperature and voltage conditions, by varying the delay line for generating a synchronized local clock of a microchip with a reference clock. Therefore, the output value inherently represents the process, voltage, and temperature conditions of the microchip.

With regard to claim 7, an inherent there are plurality of synchronizing elements (23) for synchronizing the output signals (EDGE[1]-EDGE[7]) from the plurality of sampling modules according to a clock signal (REF_CK), wherein the outputs of the plurality of synchronizing elements are input to the encoder.

Art Unit: 2816

7. Claims 8 and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by Wu (US 6,445,661).

With regard to claim 8, Wu et al. discloses in Figs.5-13 a variable delay circuit comprising a variable delay component (82) for delaying an input signal (IN SIGNAL), the variable delay component having a delay time that is controlled according to a control signal; a delay compensation circuit (78, 80) for measuring the process, voltage, and temperature conditions of a microchip and outputting a value (Ncount1) representative of the measured conditions, wherein the output value representative of the measured PVT conditions is used to control signal for the variable delay component.

With regard to claim 9, the variable delay component is a tapped delay circuit, which includes a plurality of tapped delay cells (112-116) connected in series; and a multiplexer (106) for selecting and outputting a tapped signal from one of the plurality of tapped delay cells based on the control signal.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. in view of the admitted prior art, Fig. 2 in the present application.

Art Unit: 2816

With regard to claim 6, the above discussed the apparatus of Lee et al. meets all of the claimed limitations except for the plurality of tapped delay cells includes at least one DELC1V15 delay component. The admitted prior art in Fig. 2 shows a tapped delay circuit (10) including a plurality of tapped delay components DELC1V15 (SD1-SD8). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention was made to utilize the delay components DELC1V15 taught by the admitted prior art in the delay circuit of Lee et al. for the advantage of obtaining a known delay time which is in each case optimally matched to its application.

10. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wu in view of the admitted prior art, Fig. 2 in the present application.

Claim 10 is similarly rejected; note the above discussion with regard to claim 6.

Conclusion

11. In view of a new action on the merits, this action is non-final.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai L. Nguyen whose telephone number is 703-306-9178 and Right Fax number is 703-746-3951. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Callahan can be reached on 703-308-4876. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Application/Control Number: 09/991,231

Page 7

Art Unit: 2816

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

HLN

April 23, 2003

TIMOTHY P. CALLAHAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800